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AN - PREV199497516500

RN - 6217-54-5Q (DOCOSAHEXAENOIC ACID); 25167-62 (DOCOSAHEXAENOIC ACID); 506-32-1 (ARACHIDONIC ACID); 57-88-5 (CHOLESTEROL)

TI - The importance of dietary eicosapentaenoic to docosahexaenoic acid ratio in modulation of serum lipid and arachidonic acid levels

AB - The effect of feeding diets varying in eicosapentaenoic/docosahexaenoic (EPA/DHA) acid ratio on serum cholesterol, triacylglycerol and fatty acyl chain composition was determined. Male Sprague-Dawley rats were fed EPA or DHA enriched diets and their serum lipid levels and fatty acid profiles compared with those fed diets rich in saturated fatty acids (BT) or linoleic acid (SFO). Both the EPA and DHA enriched diets lowered cholesterol content in the serum to the same degree. Serum total cholesterol to HDL-cholesterol ratio was reduced by EPA rich diet while DHA enriched diet had no effect. Both the diets enriched with omega-3 fatty acids lowered serum triacylglycerol level. Although statistically insignificant, the DHA rich diet had a tendency to lower triacylglycerol more efficiently than EPA. The serum arachidonic acid (AA) content was reduced by EPA enriched diet only, not by DHA. The fatty acid composition of phospholipid, triacylglycerol, and cholesteryl ester fractions of serum lipids was affected differently by the EPA and DHA enriched diets. These results suggest that the dietary ratio of EPA/DHA may be an important determinant of the lipid-lowering and anti-thrombotic potential of different marine oils.

IW - ** Major Concepts **
Blood and Lymphatics (Transport and Circulation) ; Cardiovascular System (Transport and Circulation) ; Metabolism; Nutrition

- ** Organisms **
(Muridae): rat

- ** Taxanotes **
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates

- ** Super Taxa **
Rodentia, Mammalia, Vertebrata, Chordata, Animalia

- ** Chemicals and Biochemicals **
DOCOSAHEXAENOIC ACID; ARACHIDONIC ACID; CHOLESTEROL

AW - ** Miscellaneous Descriptors **
ANTI-THROMBOTIC POTENTIAL; ATHEROSCLEROSIS; CHOLESTEROL; DIETARY INTERVENTION; FATTY ACIDS; OILS; PREVENTION; TRIACYLGLYCEROL

PBC - 86375

PCC - 10066, Biochemistry studies - Lipids
10067, Biochemistry studies - Sterols and steroids
13006, Metabolism - Lipids

13008, Metabolism - Sterols and steroids
13218, Nutrition - Prophylactic and therapeutic diets
13222, Nutrition - Lipids
14508, Cardiovascular system - Blood vessel pathology
15002, Blood - Blood and lymph studies
15006, Blood - Blood, lymphatic and reticuloendothelial pathologies

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